

ATTORNEY DOCKET NO. 10838STUS01U (NORT10-00206)
U.S. SERIAL NO. 09/464,076
PATENT

AMENDMENTS TO THE CLAIMS:

No new amendments have been made to the Claims.

1. (Previously Presented) A method of converting text to speech comprising:
receiving a list of textual units, where said textual units in the list comprise words, prefixes and suffixes; and
for each textual unit in the list,
locating an associated speech sample in memory, said memory comprising a vocabulary of words, prefixes and suffixes and a plurality of speech samples with each speech sample corresponding to a one of said words, prefixes and suffixes in said vocabulary; and
appending said associated speech sample to an output signal.
2. (Previously Presented) The method of claim 1 wherein when a one of said textual units in said list is indicated as not having an associated speech sample in memory, said method further comprises:
passing said indicated textual unit to a secondary text to speech engine;
receiving a speech sample converted from said indicated textual unit from said secondary text to speech engine; and
appending said converted speech sample to said output signal.

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3. (Original) The method of claim 2 wherein each said speech sample in said memory comprises a processed recording of a voice talent and said secondary text to speech engine comprises a phonetic text to speech engine based on said voice talent.
4. (Original) The method of claim 1 wherein a consecutive plurality of said textual units in said list represent a whole word, said method further comprising:
- for each textual unit in said consecutive plurality of said textual units, locating an associated speech sample in said memory;
 - creating a speech unit by splicing together said plurality of associated speech samples; and
 - appending said speech unit to said output signal.
5. (Original) The method of claim 4 further comprising, after said splicing, processing said speech unit to remove discontinuities.

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6. (Previously Presented) A method of pre-processing a text file comprising:
receiving a text file;
parsing said text file into textual units, where each said parsed textual unit is one of a word,
a prefix and a suffix; and
for each one of said parsed textual units, if said one of said parsed textual units corresponds
to a stored textual unit in a vocabulary of textual units wherein said vocabulary of textual units
comprises words, prefixes and suffixes each having a pre-recorded speech sample associated
therewith, adding said stored textual unit to a list.
7. (Original) The method of claim 6 further comprising, for each one of said parsed textual
units, if said one of said parsed textual units does not correspond to one of said stored textual units,
marking said parsed textual unit as being out of vocabulary; and
adding said marked textual unit to said list.
8. (Original) The method of claim 7 where said marking comprises pre-pending a character to
said textual unit.

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9. (Previously Presented) A text to speech converter comprising:
means for receiving a list of textual units, where said textual units in the list comprise words,
prefixes and suffixes; and
for each textual unit in the list,
means for locating an associated speech sample in a memory, said memory
comprising a vocabulary of words, prefixes and suffixes and a plurality of speech samples with each
speech sample corresponding to a one of said words, prefixes and suffixes in said vocabulary; and
means for appending said associated speech sample to an output signal.
10. (Previously Presented) A text to speech converter comprising a processor operable to:
receive a list of textual units, where said textual units in the list comprise words, prefixes and
suffixes; and
for each textual unit in the list,
locate an associated speech sample in a memory, said memory comprising a
vocabulary of words, prefixes and suffixes and a plurality of speech samples with each speech
sample corresponding to a one of said words, prefixes and suffixes in said vocabulary; and
append said associated speech sample to an output signal.
11. (Previously Presented) A computer readable medium for providing program control
to a processor, said processor included in a text to speech converter, said computer readable medium
adapting said processor to be operable to:
receive a list of textual units, where said textual units in the list comprise words, prefixes and
suffixes; and

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for each textual unit in the list,

locate an associated speech sample in a memory, said memory comprising a vocabulary of words, prefixes and suffixes and a plurality of speech samples with each speech sample corresponding to a one of said words, prefixes and suffixes in said vocabulary; and
append said associated speech sample to an output signal.

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12. (Previously Presented) A text to speech conversion system comprising:
- a text file pre-processor operable to:
 - receive a text file;
 - parse said text file into textual units, where each said parsed textual unit is one of a word, a prefix or a suffix; and
 - for each one of said parsed textual units, if said one of said parsed textual units corresponds to a stored textual unit in a vocabulary of textual units, add said stored textual units to a list;
 - and a textual unit processor operable to:
 - receive said list of textual units, where said textual units in the list comprise words, prefixes and suffixes;
 - for each textual unit in said list:
 - locate an associated speech sample in a memory, said memory comprising a vocabulary of words, prefixes and suffixes and a plurality of speech samples with each speech sample corresponding to a one of said words, prefixes and suffixes in said vocabulary; and
 - append said associated speech sample to an output signal.
13. (Canceled).

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14. (Previously Presented) A data structure embodied on a computer readable medium and comprising:

- a field for a textual unit,
- a field for a speech sample associated with said textual unit,
- a field for a frequency of a first portion of the speech sample that exceeds an amplitude threshold, and

- a field for a frequency of a last portion of the speech sample that exceeds the amplitude threshold,

- wherein said textual unit is one of a word, prefix and suffix and

- wherein a processor is capable of using the data structure to locate said associated speech sample associated with said textual unit from a memory comprising a vocabulary of words, prefixes and suffixes and a plurality of speech samples with each speech sample corresponding to a one of said words, prefixes and suffixes in said vocabulary and to use said associated speech sample to produce an output signal.

15. (Previously Presented) The data structure of claim 14 further comprising a field for a phoneme that said textual unit starts with, and a field for a phoneme that the textual unit ends with.

16. (Previously Presented) The method of claim 7 further comprising:

- passing said marked textual unit to a secondary text to speech engine;

- receiving a speech sample converted from said marked textual unit from said secondary text to speech engine; and

- appending said converted speech sample to said output signal.

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17. (Previously Presented) The method of claim 8 further comprising:
passing said marked textual unit to a secondary text to speech engine;
receiving a speech sample converted from said marked textual unit from said secondary text
to speech engine; and
appending said converted speech sample to said output signal.
18. (Previously Presented) The text to speech conversion system of claim 12 wherein:
said pre-processor is further operable to:
for each one of said parsed textual units, if said one of said parsed textual units does
not correspond to one of said stored textual units, marking said parsed textual unit as being out of
vocabulary and add said marked textual unit to said list; and
said textual unit processor further comprises:
a secondary text to speech engine operable to receive said marked textual unit and
convert said marked textual unit into a speech sample.
19. (Previously Presented) The data structure of Claim 14, further comprising at least one field
for identifying:
an offset from a beginning of the speech sample to each zero crossing that follows a positive
valued major peak in the first portion of the speech sample; and
an offset from an end of the speech sample to each zero crossing that follows a positive
valued major peak in the last portion of the speech sample.

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20. (Previously Presented) The data structure of Claim 19, further comprising at least one field for identifying one or more peak values associated with each zero crossing.

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21. (Previously Presented) A method of converting text to speech comprising:
- receiving a text file;
 - parsing the text file into one or more textual units, where each parsed textual unit is one of a word, a prefix or a suffix;
 - receiving the one or more textual units;
 - for each received textual unit, retrieving an associated speech sample, the retrieving the associated speech sample comprising,
 - determining whether the textual unit matches a stored textual unit in a vocabulary of textual units, and
 - if so, retrieving from memory a speech sample associated with the stored textual unit,
 - if not, sending the textual unit to a secondary text to speech engine and receiving a speech sample converted from the textual unit from the secondary text to speech engine; and
 - appending the associated speech sample to an output signal.

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22. (Previously Presented) The method in accordance with Claim 21 further comprising:
comparing each parsed textual unit to the vocabulary of textual units, wherein the vocabulary of textual units comprises words, prefixes and suffixes and wherein each word, prefix and suffix in the vocabulary has an associated speech sample stored in memory, and if the parsed textual unit does not match a stored textual unit in the vocabulary, indicating the parsed textual unit does not match any of the stored textual units.
23. (Previously Presented) A text to speech converter comprising:
memory comprising an array of stored textual units, each textual unit having an associated stored speech sample and wherein each of the stored textual units in the array of textual units is a one of a word, prefix and suffix;
a text pre-processor operable for receiving and parsing a text file into one or more textual units, where each of the parsed textual units is a one of a word, prefix and suffix;
a concatenation engine coupled to the text pre-processor, the concatenation engine operable for receiving one of the parsed textual units and retrieving a speech sample corresponding to the parsed textual unit and outputting the retrieved speech sample; and
a secondary text to speech engine coupled to the concatenation engine and for receiving from the concatenation engine a parsed textual unit not found in the array of stored textual units, for converting the received parsed textual unit into a converted speech sample, and sending the converted speech sample to the concatenation engine,
and wherein the concatenation engine retrieves the associated stored speech sample when the parsed textual unit is found in the array of stored textual units.

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24. (Canceled)